

Patent Claims

1. Metallic flat gasket having at least one through-opening, comprising at least two metallic layers (1, 2, 2', 4, 4') made of spring steel, there being disposed, in a first layer (1), at least one stopper (11) which surrounds the through-opening and a bead (12) which is assigned to the stopper (11) and, in the at least one second layer (4), a bead (12),

characterised in that, in the at least one second layer (4), between the stopper region and the bead (12) in the first layer (1, 2, 2', 4, 4'), at least one cranking (13) is configured adjacent to the bead (20).

2. Metallic flat gasket having at least one through-opening comprising at least three metallic layers (1, 2, 2', 4, 4', 5), at least two layers (2, 2', 4, 4') comprising spring steel and there being disposed, in an inner layer (1, 5), at least one stopper (11) which surrounds the through-opening and, in the two layers (4, 4') adjacent to this inner layer (1, 5), respectively one bead (12) which is assigned to the at least one stopper (11),

characterised in that, in the two layers (4, 4') adjacent to the inner layer (1, 5), between the stopper region and the bead (12), at least one cranking (13) respectively is configured adjacent to the bead (12)).

3. Metallic flat gasket according to one of the preceding claims,

characterised in that in the non-compressed state, the offset of the layer formed by the at least one cranking (13) is smaller than the average constructional height of the beads (12).

4. Metallic flat gasket according to one of the preceding claims,
characterised in that the flat gasket has a further layer (2') made of spring steel in which a bead (12) is configured.
5. Metallic flat gasket according to one of the claims 2 to 4,
characterised in that the beads (12) of the at least two layers (1, 2, 2', 4, 4') are disposed one above the other.
6. Metallic flat gasket according to one of the preceding claims,
characterised in that it has a further layer (3) in the form of a spacer sheet.
7. Metallic flat gasket according to one of the preceding claims,
characterised in that the stopper (11) is formed by a separate ring, a separate annular disc or by introducing an undulating, saw-tooth or trapezoidal shape.
8. Metallic flat gasket according to at least one of the claims 2 to 7,
characterised in that the stopper (11) is formed by crimping over or swaging.
9. Metallic flat gasket according to one of the preceding claims,
characterised in that the height of the stopper (11) is between 0.04 and 0.25 mm.
10. Metallic flat gasket according to one of the preceding claims,

characterised in that the height of the stopper (11) is between 0.07 and 0.20 mm.

11. Metallic flat gasket according to one of the preceding claims,
characterised in that the metallic flat gasket is a cylinder head gasket.
12. Metallic flat gasket according to one of the preceding claims,
characterised in that the metallic flat gasket is a gasket in the intake, exhaust or turbo-charger region.